

DEPARTMENT OF FOOD AND AGRICULTURE
PROPOSED CHANGES IN THE REGULATIONS
Title 3, California Code of Regulations
Section 3433, *Diaprepes* Root Weevil Interior Quarantine
INITIAL STATEMENT OF REASONS/
POLICY STATEMENT OVERVIEW

Description of the Public Problem, Administrative Requirement, or Other Condition or Circumstance the Regulation is Intended to Address

These regulations are intended to address the obligation of the Secretary of Food and Agriculture to protect the agricultural industry of California from the movement and spread within California of injurious plant pests.

Specific Purpose and Factual Basis

The specific purpose of Section 3433 is to provide for the State to regulate the movement and possible carriers of *Diaprepes abbreviatus* (*Diaprepes* Root Weevil) from the area under quarantine to prevent the artificial spread of the weevil to noninfested areas to protect California's agricultural industry.

The factual basis for the determination by the Department that the amendment of Section 3433 is necessary is as follows:

On October 17, 2006, five adult *Diaprepes* root weevils were collected from a residence in the San Diego area of San Diego County. Four were collected by the resident and one was collected by an employee of the Department. Unfortunately, there was an error in data entry that prevented the Department from being aware of these collections until December 5, 2006. The Department has reviewed its identification records and has also determined that on November 6, 2006, through visual inspection, two adult *Diaprepes* root weevils were detected at a residence located in the San Diego area of San Diego County. On November 7, 2006, two adult *Diaprepes* root weevils were detected at a residence located in the La

Jolla area of San Diego County. On November 8, 2006, another two adult *Diaprepes* root weevils were detected at a residence located in the La Jolla area of San Diego County. On December 6, 2006, six adult weevils were collected from another residence in the San Diego area of San Diego County. The number of adult *Diaprepes* root weevils detected is indicative of an incipient infestation existing in these areas of and San Diego County.

The *Diaprepes* root weevil was first detected in California on September 14, 2005, at a residence located in Newport Beach, Orange County. Through visual inspection, another 39 adult *Diaprepes* root weevils were detected in outlying areas surrounding this residence. As a result, the Department adopted two emergency regulations: 1) Section 3591.19, *Diaprepes abbreviatus* Eradication Area (effective September 28, 2005), and 2) Section 3433, *Diaprepes* Root Weevil Interior Quarantine (effective October 3, 2005). The Department subsequently detected numerous adult beetles in the Long Beach area of Los Angeles County; La Jolla (University City), Encinitas, Carlsbad, Carmel Valley, Del Mar, Fairbanks Ranch, Oceanside and Rancho Santa Fe areas of San Diego County; and the Newport Beach, Huntington Beach and Yorba Linda areas of Orange County and made appropriate emergency amendments to both regulations.

The only way to currently detect *Diaprepes* root weevil is through intensive visual survey. Even with an intensive survey it is still difficult to find the adult weevils. As a result of the numerous detections and the Department's commitment to determine the scope of the problem, the Department mailed over one million "Have You Seen This Bug?" postcards to residents determined to be in potential at risk areas. These latest finds are again linked to the Department's public outreach efforts. However, the Department will not act on the "public's" find of an adult weevil without a confirming detection in the area by an authorized plant regulatory official. Therefore, the detection of a single adult by an authorized plant regulatory official has been established by the Department as a "trigger" for a quarantine response.

An emergency quarantine response is necessary to ensure the *Diaprepes* root weevil does

not continue to multiply and spread to other uninfested areas of the State. Adult *Diaprepes* root weevils will continue emergence, and although it is a strong flyer, generally it only flies up to 300 meters to find suitable host material. The real threat of long distance spread is through the human assisted movement of infested plants or soil.

Diaprepes root weevil is a major destructive pest of citrus and many other commercial crops grown in Florida including ornamental plants and root crops. *Diaprepes* root weevil is a native of the Caribbean Islands where at least 19 additional *Diaprepes* species, not currently detected in the United States, are known to occur. *Diaprepes* root weevil was first detected in Florida in 1964 near the town of Apopka in Orange County. The weevil has now spread to parts of most agricultural areas outside of the original Apopka site. It is thought to have been introduced into Florida on ornamental plants imported from Puerto Rico.

While this pest is widespread in Florida, the Florida Department of Agriculture and Consumer Services (FDACS) still considers it a quarantine pest of concern and requires all Florida nurseries to be free of the *Diaprepes* root weevil in order to ship intrastate or interstate. Infested nurseries are required to be under a compliance agreement that enables the nursery stock to move from the nursery once all the conditions in the agreement are met. These conditions may include removal of plants from growing media, shipping plants bareroot, or the application of approved chemical treatment.

Diaprepes root weevils were also detected in the Texas Rio Grande Valley. As a result, the Texas Department of Agriculture also adopted an interior quarantine against the weevil and is also conducting an eradication program.

California also maintains an exterior quarantine regulation, Section 3279, West Indian Sugarcane Root Borer, to prevent the introduction of this weevil from infested states.

In Florida, adult weevils may emerge from the soil throughout the year. However, there are

two peak emergence periods of adult activity in the spring (May through June) and fall (August through September). Mating and egg-laying occur throughout this period. Eggs are generally laid in clusters of from 25 to 250 between mature leaf surfaces held together by an adhesive produced by the adult female. These eggs can also be laid on a single leaf, by folding parts of the leaf to cover the egg mass. A single female may lay as many as 5,000 eggs during her life of three to four months.

The eggs hatch in 7-10 days after they are laid. The larvae drop to the ground, burrow into the soil, and begin to feed on fibrous roots of host plants, moving to larger roots as they mature. The length of time spent in the larval and pupal stages varies from several months to more than a year. After a period of feeding, the larvae pupate in the soil, emerging later as adults. The total life cycle of any single weevil may last from six to 15 months resulting in multiple overlapping generations.

The current estimate for damage caused by the *Diaprepes* root weevil in Florida is approximately \$70 million per year. For individual citrus growers, the *Diaprepes* root weevil can result in a total loss. According to FDACS, over 30,000 acres of citrus in 23 counties are currently known to be infested. For ornamentals, root crops, and tropical fruit, more than 1,000 acres in two counties are known to be infested. Grower returns have been negatively affected by both reduced yields and increased production costs. Without adequate control measures, this pest can render a citrus grove operation non-profitable.

Adult *Diaprepes* root weevils feed on young, tender, citrus foliage and occasionally on fruit. The primary economic damage is caused by larvae feeding on roots and the crown area. A few large larvae can girdle and render a mature, healthy citrus tree non-productive. This behavior apparently makes *Diaprepes* root weevils unique among the citrus root weevil species found in the United States. Additionally, combinations of other root-debilitating factors such as *Phytophthora* root rot (*Phytophthora* spp.), nematodes and/or moisture stress can hasten decline of an infested tree.

Adult and larval *Diaprepes* root weevils also attack ornamental trees and agronomic root

crops. Some crops may show only adult feeding damage and others are damaged only by larvae. The presence of adult *Diaprepes* root weevils is indicated by irregular semicircular feeding areas on the leaf edges of ornamental crops, similar to citrus. Adult weevil injury can also be observed on palm flowers as well as roots. It is suspected that the spread of this pest to California's date production areas would also have a negative economic impact on that industry. Adults are generally found on plants at the time of leaf flushing but can also be found continuously on ornamental trees with permanent tender foliage.

Phytophthora spp. root rot organisms commonly infect the margin of larval feeding sites in the root bark. This may cause girdling of large structural roots and accelerated tree decline on *Phytophthora* susceptible and moderately resistant rootstocks.

Many ornamental trees support advanced larval injury before external symptoms (leaf yellowing, wilting, and defoliation) are observed. Other hosts, such as oaks, appear to be susceptible to root-debilitating factors such as *Phytophthora* root rot following larval feeding. In California, *Phytophthora* root rot already contributes significantly to the mortality of urban and rangeland oaks.

Crops with a succulent root system, fleshy roots, or tubers (cassava, malanga, potatoes) can tolerate several larvae before any external symptoms appear. Damage to root crops in Florida is manifested by shallow to deep larval feeding on fleshy roots or tubers. External damage to these root crops may lead to invasion by secondary fungal pathogens that cause rotting and prevent such crops from being sold on the fresh market.

The *Diaprepes* root weevil has the capability of causing significant irreparable harm to California's agricultural industry and environment. The Department has determined that to ensure it conducts the most efficient and effective quarantine project with the greatest chances of success, quarantine activities will need to begin as soon as possible to prevent the artificial spread of this pest to uninfested areas of California.

The amendment of Section 3433 expanded two existing quarantine areas in the Fairbanks

Ranch and La Jolla areas of San Diego County. One of adult weevil finds in the San Diego area is adjacent to the existing Fairbanks Ranch area of San Diego County and is considered an expansion of this area. The other adult weevil finds are adjacent to three separate areas of the existing Del Mar/La Jolla regulated area and are considered an expansion of this regulated area of San Diego County.

The proposed quarantine area is the smallest area possible, which includes a buffer area and is based upon the known natural dispersal of this weevil. The proposed regulated areas were jointly determined by the San Diego County Agricultural Commissioner and the Department.

While the Department's compliance with the Administrative Procedure Act and the California Environmental Quality Act (CEQA) are separate actions, they can be interrelated. Although the amendment of specific regulatory authority can be the beginning of a project and therefore covered by CEQA, this is a ministerial action for an emergency and an action also for the protection of natural resources and the environment by a regulatory agency and is therefore exempt from the requirements of the CEQA statutes, under PRC Section 21080, and under Sections 15268, 15269, 15307 and 15308 of the CEQA Guidelines.

The effect of the amendment of this regulation was to implement the State's authority to perform quarantine activities against Diaprepes root weevil in these additional areas of San Diego County. To prevent the spread of the Diaprepes root weevil to non-infested areas in order to protect California's agricultural industry and environment, it was necessary to begin quarantine activities against the Diaprepes root weevil immediately. Therefore, it was necessary to amend this regulation as an emergency action.

Estimated Cost or Savings to Public Agencies or Affected Private Individuals or Entities

The Department of Food and Agriculture has determined that Section 3433 does not impose a mandate on local agencies or school districts, except that agricultural commissioners of counties under quarantine have a duty to enforce it. No reimbursement

is required under Section 17561 of the Government Code because the Agricultural Commissioner of San Diego County requested the change in the regulations.

The Department also has determined that no savings or increased costs to any state agency, no reimbursable costs or savings under Part 7 (commencing with Section 17500) of Division 4 of the Government Code to local agencies or school districts, no nondiscretionary costs or savings to local agencies or school districts, and no costs or savings in federal funding to the State will result from the proposed action.

The Department has determined that the proposed action will not have a significant adverse economic impact on housing costs or California businesses, including the ability of California businesses to compete with businesses in other states. The Department's determination that this action will not have a significant adverse economic impact on businesses was based on the following:

Within the quarantine area, the Department has determined there are landscape maintenance companies that handle green waste and/or soil movement from or within the regulated area. Movement of such material must be conducted in a manner that precludes the escape of hitching adult DRW or the potential spread of larvae or pupae of the DRW. Green waste or soil may move within or from the regulated area if it is certified as originated from an uninfested area or inspected or treated by an authorized agricultural official or under the terms of a permit issued by the Department. Approved methods of treatment include maintaining the green waste or soil completely enclosed in containers or plastic bags, or completely covered with fine mesh or tarps, or moved in an enclosed truck or trailer or chipped and shredded on site prior to movement to an authorized disposal site. All of these methods are very inexpensive and are already required as a condition of movement on public roadways by other State and/or local agencies. Therefore, these methods of treatment would not represent a significant economic impact.

The Department has also determined that there is no known ongoing commercial soil movement businesses located within the regulated area.

The Department has determined there are three outdoor ornamental production nurseries located within the area under quarantine. A nursery with an active DRW infestation must treat the soil/growing media of the containerized plants and will also have to treat the foliage at some point in order to be eligible for quarantine certification. Other regulated outdoor ornamental plant producers must at least treat the containerized plants' soil/growing media prior to movement of the plants from the nursery. A chemical drench may be applied or a granular chemical may be incorporated to the soil/growing media prior to shipping, but it does not have to be applied repeatedly to plants remaining on the nursery grounds. Granular bifenthrin incorporated into the soil/growing media meets the quarantine requirements for 24 months after application due to the material being active for that length of time. However, if bifenthrin is applied as a drench treatment, that formulation meets the quarantine certification requirements for six months after application due to the material being active for that length of time.

When a production nursery first becomes regulated, its only option may be to drench treat the existing containerized plants on the nurseries grounds. This is due to it being impractical to repot these plants in new containers incorporating the approved granular formulation of the chemical with the soil/growing media. However, any new plant material produced at the nursery may then be in containers using the granular formulation in the soil/growing media.

There are many variables that may impact the actual cost for compliance. There are currently 19 different labeled products that are registered for use in California and which may be used for treatment to obtain quarantine certification. Some of these products may either be used singly or must be used in combination and this is dependent upon the nursery's production methods; stage of development of the nursery stock; the biological risk to exposure of the nursery stock to infestation; and, the nursery's production and sales needs. The costs for these products all vary at both the retail and wholesale levels. The costs will also vary based upon the given volume purchased at any one time.

The approved materials (efficacious and registered for use in California) for treatments are dependent upon the nursery's production methods that affect the risk to exposure to infestation, such as:

1. Plants started from seed, cuttings or transplants;
2. Containerized plants less than or equal to four-inch containers;
3. Containerized plants with a growing cycle less than six months;
4. Containerized plants with a growing cycle longer than six months;
5. Balled and burlap plants shipped with leaves and rooted in soil/growing media;
6. Balled and burlap plants shipped without leaves and rooted in soil/growing media; and,
7. Dormant (without leaves) plants and shipped bareroot (without soil/growing media) is exempt from the regulation and some growers may choose to ship this way even though they normally would not.
8. The nursery stock is produced outdoors or within an enclosure (such as a greenhouse or screen house).

What approved materials may be applied will depend upon whether there is an active infestation at a nursery or the nursery is at risk and located within a regulated area. Where a nursery is infested, the biological risk of all life states being present: egg, larvae, puparium, and adults is extremely likely. The larvae and puparium may be in the soil/growing media and the eggs, larvae and adults may be present in the foliage. Where the nursery is just located within the flight range of a gravid female adult weevil, the foliage presents the highest biological risk for a weevil life stage to be present.

Approved materials used to treat the growing media may be incorporated into the soil mix prior to planting or during transplanting or applied as a drench treatment. The method of application, incorporation or drenching, affects the cost of application, the material used and the length of time the plant material is eligible for quarantine certification.

The length of time to treat an acre varies greatly depending on size of the container holding the nursery stock (one gallon container versus 36" box), the size and spacing of the containers, walkways, roadway, etc.

Other factors that may affect the cost of compliance include:

- The type of material used affects the length of certification period based upon the type, quantity and formulation of the active ingredient in the material.
- How long the nursery stock is held at the affected nursery prior to its sale and the need to have replacement stock in the production cycle.
- Pending sales contracts may vary from nursery to nursery and drive the nursery's choice of approved materials to use.
- Labor costs may vary from nursery to nursery.
- Whether the nursery has a qualified pesticide applicator on site or has to hire one varies from nursery to nursery and size of the nursery may be a factor.
- The availability of the necessary treatment equipment and type of equipment may vary from nursery to nursery.
- There is a substantial difference between start-up and ongoing costs.
- A nursery may have two to three crops per year in its production cycle.

Therefore, rather than there being a single prescriptive treatment, there are a number of possible treatments available to ensure that the performance standard, treated in a manner to eliminate live life stages of DRW from nursery stock, is met based upon the biological risk of the nursery stock harboring a live life stage of DRW.

Based on the preceding information, it was determined that the amendment of Section 3433, may have an adverse economic impact on some nursery businesses, but it is not expected to be significantly adverse. For the most part, there are a number of optional ways to comply that are available to the affected businesses so they may select the means with the lowest cost and easiest implementation for them. The highest costs for

compliance would be for an infested nursery. An average infested ornamental production nursery producing plants in one-gallon containers may incur initial costs of \$334 to \$527 per acre per six month period and; thereafter, ongoing costs of \$214.75 to \$456.25 per acre per six month period in reasonable compliance with the proposed action. Approximately 65,000 one-gallon containers may be placed upon one acre. This translates into an initial increased production cost of \$0.005 to 0.008 per one gallon container and an ongoing production cost of \$0.003 to 0.007 per one gallon container of nursery stock every six months. For the majority of businesses, no additional costs will be incurred.

Assessment

The Department has made an assessment that the amendment to this regulation would not (1) create or eliminate jobs within California, (2) create new business or eliminate existing businesses within California, or (3) affect the expansion of businesses currently doing business within California.

Alternatives Considered

The Department of Food and Agriculture must determine that no alternative considered would be more effective in carrying out the purpose for which the action is proposed or would be as effective and less burdensome to affected private persons than the proposed action.

Information Relied Upon

The Department is relying upon the following studies, reports, and documents in the adoption of Section 3433:

“DRW Interior Quarantine Estimated Cost Basis,” February 6, 2007, California Department of Food and Agriculture, Plant Health and Pest Prevention Services, Permits and Regulations.

The label for “Talstar Nursery Granular Insecticide,” EPA Reg. No. 279-3130, FMC Corporation, Philadelphia, PA.

The label for “Talstar Nursery Flowable Insecticide/Miticide,” EPA Reg. No. 279-3155, FMC Corporation, Philadelphia, PA.

Email dated January 24, 2007, from Brian Cahill to Stephen Brown and its attachment.

Email dated January 3, 2007, from Brian Cahill to Courtney Albrecht.

Email dated December 29, 2006, from John Blasius to Stephen Brown.

Letter dated December 12, 2006, to Mr. A.G. Kawamura, Secretary, from Robert G. Atkins, San Diego County Agricultural Commissioner.

Letter dated November 30, 2006, to Mr. A.G. Kawamura, Secretary, from Robert G. Atkins, San Diego County Agricultural Commissioner.

Letter dated August 3, 2004, from Daniel C. Phelps to Courtney Albrecht.

"Annual Red Imported Fire Ant (RIFA) Interior Quarantine Cost Basis," March 22, 1999, California Department of Food and Agriculture, Plant Health and Pest Prevention Services, Permits and Regulations.

Email dated September 21, 2005, and its attachment entitled, "Pest Profile," from Kevin Hoffman to Stephen Brown.

"Host Plants of *Diaprepes* Root Weevil and Their Implications to the Regulatory Process," S.E. Simpson, H.N. Nigg, and J.L. Knapp, Division of Plant Industry, Florida Department of Agriculture and Consumer Services (18 pages).

"Biology of *Diaprepes abbreviatus* in the Laboratory and Field," Philip A. Stansly, University of Florida (six pages).

"History and Importance of *Diaprepes* to Florida," David G. Hall, United States Sugar Corporation (six pages).

"Citrus Root Weevil - *Diaprepes abbreviatus*," Texas Department of Agriculture (one page).

"Pest and Damage Record #1378532," dated December 6, 2006, California Department of Food and Agriculture, Plant Health and Pest Prevention Services.

"Pest and Damage Record #1378531," dated December 6, 2006, California Department of Food and Agriculture, Plant Health and Pest Prevention Services.

"Pest and Damage Record #1378464," dated November 8, 2006, California Department of Food and Agriculture, Plant Health and Pest Prevention Services.

“Pest and Damage Record #1378462,” dated November 7, 2006, California Department of Food and Agriculture, Plant Health and Pest Prevention Services.

“Pest and Damage Record #1378460,” dated November 6, 2006, California Department of Food and Agriculture, Plant Health and Pest Prevention Services.

“Pest and Damage Record #1304315,” dated October 17, 2006, California Department of Food and Agriculture, Plant Health and Pest Prevention Services.